

The Examiner rejects claims 13, 16, 17, 21, 23-26 and 28-30 under 35 U.S.C. §103(a) as unpatentable over U.S. Patent No. 4,563,367 to **Sherman**, and claims 22 and 27 are rejected under 35 U.S.C. §103(a) as unpatentable over U.S. Patent No. 4,563,367 to **Sherman** in view of U.S. Patent No. 4,525,381 to **Tanaka et al.** Applicant contends that the claimed invention clearly defines subject matter which is patentably distinct over these references for at least the following reasons.

The claimed invention is directed generally to a vapor reaction method including, *inter alia*, the steps of providing a pair of first and second electrodes within a reaction chamber, placing a substrate in the reaction chamber on the first electrode, introducing first and second film forming gases into the reaction chamber using the second electrode, and introducing a cleaning gas into the reaction chamber using the second electrode in order to remove unnecessary layers caused by the first and second vapor depositions from the interior of the reaction chamber.

Initially, Applicant addresses the Examiner's arguments regarding the amendment of the claims to change "preparing" to "providing." Although Applicant appreciates that this change did not likely change the scope of the Examiner's search for examination purposes, the new claim language gives a different scope of protection afforded issued claims in this case, since the claims prior to amendment required that a potential infringer to actually "prepare" the recited electrodes, while now the claims merely require "providing" the electrodes that may or may not be prepared by those practicing the claimed method. Consequently, the claims are now broader in scope to capture that which Applicant is entitled.

With regard to the prior art rejections, as previously asserted, **Sherman** clearly fails to expressly teach or inherently suggest each claim limitation necessary to support a *prima*

positioning a substrate upon which a film will be formed on electrode 23. The Examiner then indicates that because Figure 4 appears to show that the etching gas can arrive through either pipe 47 or 48, then it would be "inherent" that the deposition and etching gases arrive in the chamber through pipe 47. This conclusion is not proper since the disclosure of **Sherman** is still insufficient to teach the method of the present invention, namely, providing a pair of electrodes where one of the pair of electrodes has the dual function of introducing both (1) a film forming gas and (2) a cleaning gas into the reaction chamber.

As shown in FIG. 4, **Sherman** explicitly discloses that an etching gas is supplied from gas storage tank 46 to the interior of process chamber 45 via line 48 and inlet 22. (See, col. 7, lines 30 and 40-42.) Thus, from the express language in the **Sherman** patent, there is no teaching or suggestion in **Sherman** to use electrode 25a as an inlet for introducing the etching gas into chamber 45. More particularly, **Sherman** fails to teach the introduction of a film formation gas and an cleaning or etching gas through only one of a pair of electrodes while a substrate is placed on the other of the pair of electrodes.

In the Office Action, the Examiner points to no express teaching in the **Sherman** reference to suggest this distinct features noted above with respect to utilization of the pair of electrodes as in the presently claimed invention. The Examiner's reliance on **Sherman's** statement that the invention applies to "etching the electrodes" (col. 5, line 26) does nothing to suggest either expressly or inherently that the etching gas is introduced through the same electrode as the deposition gas. In fact, as noted above, Sherman expressly teaches the opposite, in that, the disclosure at col. 7, lines 30 and 40-42 discloses that the etching gas is introduced through line 48 and inlet 22. Moreover, Figure does not depict delivery of the deposition gas and etching gas to "EITHER" electrode, as asserted by the Examiner on page 2 of the Office Action, since the specification itself expressly indicates otherwise, and

disclosure of Sherman in attempt to reach the claims of the instant application.

The Examiner's own arguments in the last line of the second paragraph of Section 1 supports Applicant's position, in that, the Examiner states that "... Applicant only teaches a configuration introducing gas through one electrode of the pair." This is the particular feature that Applicant claims distinguishes the claims over the cited art, and, particularly, that Sherman fails to teach. It is improper for the Examiner to merely argue "inherency" as the basis for rejection without some suggestion that both the film forming gas and the cleaning gas are introduced through the same electrode.

Both the suggestion of the invention and the expectation of success must be found in the prior art, not in Applicant's disclosure. Selective hindsight is not appropriate to design experiments in order to reach the claimed invention. *In re Dow Chemical*, 5 U.S.P.Q.2d 1529, 1531-32 (Fed. Cir. 1988). Moreover, the recognition of a problem which was previously not known has been held sufficient to render claims directed to the solution to the problem unobvious. "If, as Appellants claim, there is no evidence of record that a person of ordinary skill in the art at the time of applicants' invention would have expected the problem in the IG-FET to exist at all, it is not proper to conclude that the invention which solves this problem, which is claimed as an improvement of the prior art device, would have been obvious to that hypothetical person of ordinary skill in the art." *In re Nomiya, Kohisa, and Matsumura*, 184 U.S.P.Q. 607, 612 (C.C.P.A. 1975). The Examiner is taking Applicant's disclosure and attempting to re-write Sherman to provide a teaching or suggestion of the claimed features, which is not proper, since Sherman expressly provides otherwise.

The Examiner must first establish a *prima facie* case of obviousness before unexpected results are required to overcome such a rejection. A *prima facie* case of

invention and prior art subject matter and (2) where the prior art gives reason or motivation to make the claimed invention or to combine references to achieve the claimed invention. Once a *prima facie* case of obviousness has been made by the Patent Office, the burden then shifts to Applicant to rebut that *prima facie* case. This rebuttal can include any arguments or presentation of evidence that is pertinent to the issue of unobviousness including, for example, comparison of test data showing unexpected properties not present in the prior art or that the prior art is so deficient that there is no motivation to make what might appear to be obvious changes. *In re Dillon*, 16 U.S.P.Q.2d 1897, 1901 (Fed.Cir. 1990). Since the Examiner has failed to even satisfy the first requirement of a *prima facie* obviousness rejection, the rejection should be considered improper and unexpected results unnecessary.

There are also no secondary references cited in the rejection that overcome the deficiencies of the ***Sherman*** reference. Accordingly, insofar as ***Sherman*** fails to disclose every feature of the claimed invention, *prima facie* obviousness cannot result.

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Accordingly, Applicant respectfully submits that the pending claims are in proper condition for allowance and reconsideration and withdrawal of the pending rejections are requested. If the Examiner believes further discussions with Applicant's representative would be beneficial in this case, he is invited to contact the undersigned.

Respectfully submitted,
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